REMARKS

Claims 1 and 16 have been amended and claims 2 and 3 have been canceled without any prejudice or disclaimer to the subject matter expressed therein. New claims 17-21 have been added. Upon entry of the above amendment, claims 1 and 4-21 will be pending in the present application. Applicants respectfully submit that the claim amendments and additions do not add any new matter within the meaning of 35 USC §132. Accordingly, entry of these amendments is respectfully requested.

1. Rejection of claims 1-4 and 7-16 under 35 U.S.C. §102(b)

The Official Action states that claims 1-4 and 7-16 are rejected under 35 U.S.C. §102(b) as being anticipated by Prince *et al.* (US 5,308,648). In particular, the Official Action states that Prince *et al.* disclose combining a first and second material "in a process comprising: providing a near-critical or supercritical fluid to form a single phase solution with the materials and then removing the fluid from the solution as a result of the volatility of the supercritical fluid."

Applicants respectfully traverse this rejection. The test for anticipation is whether each and every element as set forth is found, either expressly or inherently described, in a single

prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987); MPEP § 2131. The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989); MPEP § 2131. The elements must also be arranged as required by the claim. *In re Bond*, 15 USPQ2d 1566 (Fed. Cir. 1990).

Claims 2 and 3 have been canceled and therefore, the cancelation of the claims renders the rejection of these claims moot.

Claims 1 and 16 have been amended to incorporate the limitations of now canceled claim 2 to specifically claim that the first material is at least partially dissolved in the fluid, and the solution of the first material in the fluid is then incorporated into the second material in order to form the single phase solution.

Applicants respectfully direct the Examiner's attention to the scope of amended method claim 1. The claim is drawn to a method for combining a first material and second material comprising the steps of providing a fluid which is near or in the supercritical fluid state, at least partially dissolving the first material in the fluid, incorporating the solution of the

first material and the fluid into the second material to form a *single phase* solution from the first material, the second material and the fluid, and removing the fluid from said solution to leave the combined first and second materials. Prince *et al.* does not teach forming a single phase solution from the first material, the second material and the fluid. The supercritical fluid of the Prince *et al.* reference is used only to reduce the viscosity of a slurry of the first material and the second material.

In addition, the Prince *et al.* reference does not teach the order of the steps of the method. Prince *et al.* teach mixing a first material and a second material in order to form a slurry, which is *subsequently* mixed with the supercritical fluid (See column 7, lines 56-65 and column 8, lines 3-8). The Examiner points to column 9, lines 5-10 to support the rejection of the limitations of previous claim 2, more specifically, the partial dissolution of the first material in the fluid prior to the dissolution of the second in the fluid. However, this portion of the reference actually only discloses a mixture of slurries (combinations of the first and second materials). The reference does not in any way disclose or contemplate at least partially dissolving the first material in the fluid which is already near

or in the supercritical fluid state to form a first solution *prior to* combining the first solution with the second material.

Accordingly, it is absolutely clear that Prince *et al.* fail to teach each and every element of the presently claimed invention. Namely, Prince *et al.* fail to teach the method for combining a first material and second material, comprising the steps of providing a fluid which is near or in the supercritical fluid state first, and only then at least partially dissolving the first material in the fluid, and further incorporating the solution of the first material and the fluid into the second material to form a single phase solution, and removing said fluid from said solution. Rather, Prince *et al.* disclose initially forming a mixture of the first and second materials, and only then adding this mixture of both materials to supercritical fluid. Further, Prince *et al.* fail to teach a single phase solution of the first material, second material and the fluid, as required by the presently pending claims.

As such, the Prince *et al.* reference fails to establish a *prima facie* case of anticipation of presently pending claims 1, 4, and 7-21, and withdrawal of this rejection is respectfully requested.

2. Rejection of claims 5 and 6 under 35 U.S.C. §103(a)

The Official Action states that claims 5 and 6 are rejected under 35 U.S.C. §103(a) as being unpatentable over Prince *et al.* (U.S. Patent No. 5,308,648) in view of DeSimone (U.S. Patent No. 5,922,833).

As the basis for this rejection, the Official Action states in relevant part:

> Claims 5 and 6 differ in requiring that the carbon dioxide being removed by the material by venting or suction although Prince et al. does disclose the fluid being volatile so as to separate from the material formed by mixing. DeSimone teaches to remove carbon dioxide from formed polymeric materials by venting and suction process steps (Column 5, lines 47-54, column 9, lines 44-49 and column 10, lines 18-23). It would have been obvious to one of ordinary skill in the art to have utilized the suction and venting of DeSimone to more thoroughly remove all of the supercritical fluids to form a more purified end product.

Response

Applicant respectfully traverses this rejection of claims 5 and 6. The cited references do not establish a *prima facie* case of obviousness against the presently pending claims.

To establish a prima facie case of obviousness, the PTO must satisfy three requirements. First, as the U.S. Supreme Court recently held in KSR International Co. v. Teleflex Inc. *et al.*, Slip Opinion No. 04-1350, 550 U.S. (April 30, 2007), "a

court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions. ...it [may] be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. ...it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does... because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known." (KSR, supra, slip opinion at 13-15). Second, the proposed modification of the prior art must have had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. Amgen Inc. v. Chugai Pharm. Co., 18 USPQ 1016, 1023 (C.C.P.A 1970). Lastly, the prior art references must teach or suggest

all the limitations of the claims. In re Wilson, 165 USPQ 494, 496 (C.C.P.A. 1970).

A. Presently claimed subject matter

The present pending claims as exemplified by currently amended independent claim 1 are directed to:

> A method for combining a first material and a second material, comprising the steps of
> providing a fluid which is near or in the supercritical fluid state,
> at least partially dissolving the first material in the fluid,
> incorporating the solution of the first material and the fluid into the second material to form a single phase solution from the first material, the second material and said fluid, and
> removing said fluid from said solution in order to leave the combined first and second materials.

Claims 5 and 6 each depend from claim 1 and add the limitation of removing the fluid from the solution either by reducing the pressure and venting the fluid to the atmosphere as a gas (Claim 5), or by suction (Claim 6).

B. The Teachings of the Prince *et al.* reference (US 5,308,648)

As described above in Section 1, the arguments of which are incorporated herein by reference in their entirety, Prince *et al.* relates to a method of suspending or dispersing a polymer additive material (first material) in a liquid carrier material (second material) to form a mixture having a paste-like

consistency. Further, a viscosity reducing agent (the supercritical fluid) is subsequently added to form a sprayable composition. Prince *et al.* fail to teach a method for combining a first material and second material comprising the steps of providing a fluid which is near or in the supercritical fluid state first, and only then at least partially dissolving the first material in the fluid, and further incorporating the solution of the first material and the fluid into the second material to form a single phase solution, and removing said fluid from said solution. Further, Prince *et al.* fail to teach a single phase solution of the first material, second material and the fluid. Still further, Prince *et al.* fail to show that the supercritical fluid is removed from the composition through venting or suction.

C. **The Teachings of the DeSimone reference (US 5,922,833)**

The DeSimone reference discloses a process for making a fluoropolymer wherein the fluoromonomer is solubilized in a solvent in a supercritical state and then polymerizing the fluoromonomer to form a fluoropolymer. When the polymerization is complete, the supercritical solvent is separated off the composition through venting to the atmosphere.

D. The combination of references does not show all the elements of the pending claims, and thus cannot render these claims obvious

The presently pending claims are distinguishable from the cited references. Neither of the references, taken alone or in combination, contains all the elements of the presently pending claims, and thus cannot render these claims obvious. In particular, independent claim 1 recites a method of combining a first material and a second material wherein the first material is at least partially dissolved in a fluid which is near or in the supercritical fluid state and subsequently added to the second material to form a single phase solution from which the fluid is removed to leave the combined first and second materials.

In contrast, Prince *et al.* and DeSimone both teach the use of supercritical fluids in combination with two or more materials. As discussed above in Section 1, the arguments of which are incorporated by reference herein in their entirety, Prince *et al.* fail to teach the same order for the method steps. In particular, Prince *et al.* teach combining the first and second material to form a slurry, which is *subsequently* mixed with the supercritical fluid whereas the presently pending

claims recite that the first material is at least partially dissolved in the fluid and only then combined with the second material. In addition, Prince *et al.* fail to teach a single phase solution of the first material, second material and the fluid but rather teaches a slurry of the first and second material wherein a supercritical fluid is then introduced to reduce the viscosity of the slurry. There is nothing in the Prince *et al.* reference to suggest or motivate one of ordinary skill in the art to carry out the method steps in a different order, such as is presently claimed.

Furthermore, the fluid near or in the supercritical fluid state of the presently pending claims is used as a solvent to aid dissolving the first material in the second material. In contrast, the supercritical fluid of the Prince *et al.* reference is used to reduce the viscosity of a slurry of the first and second materials, which is a completely different function from what is claimed in the presently pending claims. In view of this different function, it would not be within the contemplation of one of ordinary skill in the art to depart from the teachings of Prince *et al.* to arrive at the subject matter of the presently pending claims.

The DeSimone reference does not remedy the deficiencies of the Prince *et al.* reference. Regarding the DeSimone reference, this reference teaches a solution of fluoromonomers with a supercritical fluid which is then polymerized. In addition, the DeSimone reference teaches that the supercritical fluid can be removed from the solution through venting the fluid to atmosphere.

The DeSimone reference does not teach or suggest the specific order of the method steps that are presently claimed. In particular, the DeSimone reference teaches dissolving the first material in a supercritical fluid and subsequently polymerizing that solution. DeSimone provides no guidance to modify the order of the method steps the Prince *et al.* reference to arrive at the method of the presently pending claims. The Examiner cites the DeSimone reference only to show that a supercritical fluid can be removed from a solution through venting. Accordingly, none of the references, taken alone or in combination, teach a method of combining a first material and a second material wherein the first material is at least partially dissolved in the fluid which is near or in the supercritical fluid state and subsequently added to the second material to

form a single phase solution from which the fluid is removed to leave the combined first and second materials.

Accordingly, the Prince *et al.* and DeSimone references, taken alone or in combination, do not show all of the elements of the presently pending claims, and thus cannot render these claims obvious. In addition, neither reference provides any suggestion or motivation to change the order of the method steps of Prince *et al.* to arrive at the method of the presently pending claims, and thus cannot render these claims obvious.

Applicants respectfully request the Examiner to reconsider and withdraw the current rejection to presently pending claims 5 and 6.

CONCLUSION

In view of the foregoing, applicants respectfully request the Examiner to withdraw the pending rejections and allow all pending claims 1 and 4-21 to proceed to grant. If the Examiner has any questions or wishes to discuss this matter, he is welcomed to telephone the undersigned attorney.

Respectfully submitted,

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